

## REPORT ON MACHINERY.

No. 22217

Port of

Glasgow

No. in Survey held at

Paisley

Reg. Book.

Date, first Survey

21<sup>st</sup> March

Last Survey

8.9.

1904

Received at London Office

TUES. 1 NOV 1904

Laid on the

Boilers for S.S. "Erny"

(Number of Visits 13)

Master

Built at

Port Glasgow

By whom built

Russell &amp; Co

Tons

Gross

Net

When built

1904

Engines made at

Greenock

By whom made

J. S. Kincaid &amp; Co

when made

1904

Boilers made at

Paisley

By whom made

A. F. Craig &amp; Co (333/4)

when made

1904

Registered Horse Power

Owners

Fratelli Losolich

Port belonging to

Trieste

Nom. Horse Power as per Section 28

Is Refrigerating Machinery fitted

Is Electric Light fitted

## ENGINES, &amp;c.—Description of Engines

No. of Cylinders

No. of Cranks

Dia. of Cylinders

Length of Stroke

Revs. per minute

Dia. of Screw shaft as per rule

Material of screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Is the after end of the liner made water tight

in the propeller boss If the liner is in more than one length are the joints burned

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

If two

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush

Dia. of Tunnel shaft as per rule

Dia. of Crank shaft journals as per rule

Dia. of Crank pin

Size of Crank webs

Dia. of thrust shaft under

collars

Dia. of screw

Pitch of screw

No. of blades

State whether moveable

Total surface

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Bilge pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Donkey Engines

Sizes of Pumps

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

In Holds, &amp;c.

No. of bilge injections

sizes

Connected to condenser, or to circulating pump

Is a separate donkey suction fitted in Engine room &amp; size

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel

Are the blow off cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers

How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

Is the screw shaft tunnel watertight

Is it fitted with a watertight door

worked from

## BOILERS, &amp;c.—

(Letter for record (S))

Total Heating Surface of Boilers

4530

Is forced draft fitted

No. and Description of Boilers

Two Single Ended

Working Pressure

180 lb

Tested by hydraulic pressure to

360 lb

Date of test 8.9.04 Can each boiler be worked separately

Area of fire grate in each boiler

66

No. and Description of safety valves to

each boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

15'-6"

Length

10'-6"

Material of shell plates

slut

Thickness

1 1/4"

Range of tensile strength

28 tons

Are they welded or flanged

no

Descrip. of riveting: cir. seams

D. R. L.

long. seams

D. B. S.

Diameter of rivet holes in long. seams

1 3/16"

Pitch of rivets

9"

Lap of plates or width of butt straps

19 1/2"

Per centages of strength of longitudinal joint

rivets

89

plate

85

Working pressure of shell by rules

180 lb

Size of manhole in shell

16 x 12

Size of compensating ring

27 x 31

No. and Description of Furnaces in each boiler

3 Duglon

Material

slut

Outside diameter

4'-2 1/4"

Length of plain part

top

bottom

Thickness of plates

19 1/2"

Description of longitudinal joint

weld

No. of strengthening rings

—

Working pressure of furnace by the rules

187

Combustion chamber plates: Material

slut

Thickness: Sides

2 1/32"

Back

2 1/32"

Top

2 3/32"

Bottom

1/16"

Pitch of stays to ditto: Sides

9 x 9

Back

9 x 9

Top

9 x 10 1/2"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

183 lb

Material of stays

slut

Diameter at smallest part

2.07"

Area supported by each stay

81"

Working pressure by rules

180

End plates in steam space:

Material of stays

slut

Thickness

1 9/32"

Pitch of stays

21 x 20 1/2"

How are stays secured

D. nuts

Working pressure by rules

180

Material of stays

slut

Diameter at smallest part

7.5"

Area supported by each stay

425"

Thickness

3/4"

Material of Lower back plate

slut

Thickness

7/8"

Greatest pitch of stays

16 1/2"

Working pressure of plate by rules

180 lb

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2"

Material of tube plates

slut

Thickness: Front

3/4"

Back

3/4"

Mean pitch of stays

9"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

200 lb

Girders to Chamber tops: Material

slut

Depth and

thickness of girder at centre

9 x 3 1/4 x 2"

Length as per rule

29 1/2"

Distance apart

10 1/2"

Working pressure by rules

190

Superheater or Steam chest; how connected to boiler

none

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

—

—

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Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

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Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

—

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Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

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**DONKEY BOILER—** No. 1 Description Cylindrical Hull  
 Made at Paisley By whom made A F Craig & Co When made 1904 Where fixed  
 Working pressure 80 lbs Tested by hydraulic pressure to 160 lbs No. of Certificate 7251 Fire grate area 20 1/2 Description of safety valves  
 No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boilers can enter the donkey boiler  
 Dia. of donkey boiler 9'-0" Length 8'-0" Material of shell plates steel Thickness 1 1/2" Range of tensile strength 28 tons Descrip. of riveting long. seams D. R. D. B. Dia. of rivet holes 7/8" Whether punched or drilled drilled Pitch of rivets 3 7/16"  
 width of stay 7 3/8" Per centage of strength of joint Rivets 114 Thickness of shell crown plates — Radius of do. — No. of Stays to do. —  
 Dia. of stays. — Diameter of furnace Top 2'-8" Bottom — Length of furnace 5'-0" Thickness of furnace plates 1 3/8" Description of joint weld Thickness of furnace crown plates — Stayed by — Working pressure of shell by rules 86 lbs  
 Working pressure of furnace by rules 90 lbs Diameter of uptake — Thickness of uptake plates — Thickness of water tubes —  
**SPARE GEAR.** State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

*A F Craig & Co Ltd  
 Archd. Vain Lee*

Dates During progress of work in shops — 1904 March 21. 28. Apr 13. 28. May 4. 14. 24 June 27. July 6. 20. 28. Aug  
 of Survey During erection on board vessel — 30. Sept 8.  
 while building Total No. of visits 13.  
 Is the approved plan of main boiler forwarded herewith Yes.  
 " " " donkey " " " Yes.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

*These boilers have been constructed under Special Survey & are of good materials & workmanship. They have been sent to Greenock to be fitted on board.*

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee.. £ 1/3 *inc Glasgow* When applied for, .. .. 19...  
 Special .. .. £ .. .. When received, .. .. 19...  
 Donkey Boiler Fee .. .. £ .. ..  
 Travelling Expenses (if any) £ .. ..

Committee's Minute Glasgow 24 OCT 1904

Assigned Deferred for completion

*H Gardner-Smith & J W Dimmock*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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